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LITERATURE.

An Introduction to Psychology, by MARY WHITON CALKINS. The MacMillan Company, New York and London, 1901.

"The book is written in the conviction that psychology should study consciousness, both as a series of complex mental processes, or ideas, and as a relation of conscious selves to each other;" there are, therefore, to be considered both "the psychology of ideas, the study of succeeding facts of consciousness without reference to conscious selves, and the psychology of selves, that is, the study of consciousness as the experience of related selves." The first large division of the work separates the treatment of "structural elements of consciousness" and of "concrete conscious experiences." This two-fold investigation of the "normal consciousness" is followed by a briefer account of "comparative psychology and abnormal psychology." At the end of the book stand an appendix and a bibliography.

After twelve pages on the "nature and methods of psychology," the student (the volume is intended to be a text-book) begins, at once, the study of sensation. A brief page hints at the nature of psychological analysis, without, however, making clear the essential and vital distinction between an analysis of 'objects' and an analysis of mind—as when the author speaks of the sensational elements of "rich color and graceful form" (150). It is, clearly, incorrect to speak of structure of mind as the collection of heterogeneous bits and scraps of the 'outside' world. Such a confusion is especially deplorable in a text-book for elementary students.

Most of Part I is devoted to a discussion of the various sensational elements. The definition and discussion of 'sensation' and 'sensation element' are postponed until the concrete facts are set down. The consequence is that the reader knows only by looking ahead exactly what is the author's distinction between the 'element' and the 'sensation.' Other elements are the 'attributive' elements of pleasantness and unpleasantness, the "feeling of realness" and the various "relational elements." The treatment of the elements is followed by a brief chapter on attention, in "its primary meaning of clearness or vividness,"—"a simple relational experience."

The point of greatest interest in this part of the book (Part I) is the author's development of the elements of consciousness. The outline departs but little from the scheme proposed by Doctor Calkins in her paper on "Elements of Conscious Complexes" in the *Psychological Review* (VII, 377). The element of consciousness is defined as "a distinct and further unanalyzable feeling or fact of consciousness." Sensational elements are distinguished in several ways: (1) they are "present in every concrete, conscious experience" (psychological criterion); (2) they correspond to some assignable change in peripheral end organs (physiological criterion), and (3) almost every sensational element has a distinct physical condition (physical criterion). There are three sub-classes of these elements; qualities, intensities and extensities. "The fundamental ground for this division is the observed distinctness of these groups of elements." But the division rests, also, on the two types of serial arrangement under which the elements fall; direct serial arrangement, in the case of intensities and extensities, and indirect, in the case of qualities.

Curiously enough, the author's elaborate classification of elements is drawn very largely from James's Principles. The sensations are said (114) to correspond to his "substantive facts of consciousness;" the attributive elements (affections) are opposed to the substantive states (because they seem "'to belong' to other elements"), and the relational elements are made to correspond to the "transitive states" of the Principles (133). It may, however, be remarked, in passing, that it is not at all clear that James conceives of these states as classes of 'elements.' In fact, he speaks of the substantive states ("lingering consciousnesses") as sensations, images, percepts, concepts and thoughts (I, 247). It is to be noticed that he is giving the characteristics of the continuous 'stream of thought,' among other characteristics the "different pace of its parts," and is, apparently, not making an analytic quest for ultimate elements. Miss Calkins, it is true, uses the term 'element' in a new sense, but not in the sense of the 'lingering consciousness.' Any final qualification she conceives as an element. She forfeits her right to the term with its old connotation when she passes (*cf. Psych. Rev.*, VI, 507) from irreducibility—the usual mark of the element—to simple characterization or qualification (*cf. Hume's* discussion of *distinctio rationis*). This modification of meaning disregards, it is clear, the very important difference between analyzability and a plurality of properties or characteristics; between a subject—to state the case in logical terms—that can be expressed in simpler subjects and one that is capable of receiving more than one predicate. It is, *e. g.*, no more a dissection of the sensation 'red' to add that it has intensity and extent than it is a dissection of the element 'oxygen' to add that it has the atomic weight 16 and possesses an affinity for free hydrogen. If one were really dissecting, one would be able, in the first instance, to put intensity and extent together and get 'red,' and in the other, to add atomic weight and affinity and produce oxygen. There is, without doubt, an essential difference, from the point of view of analysis, between the qualitative moment and the other moments in the sensation. The author has, herself, hinted at this essential difference by saying, after James, that one has continually 'more and more' as one rises in the intensive and the extensive series, but 'more and more difference' in the qualitative series. Now this is very much like saying that in one case the 'thing,' the 'element,' is not changed—only its amount is changed; while, in the other, a new element is continually appearing;—an element more and more different in kind, not in amount. The 'extensity' series of elements meets with the special difficulty that any member of such a series is divisible and, therefore, complex. The same argument cannot be made to do duty against 'extent' conceived as an attribute, for subdivision does not, in that case, affect the simplicity of the element. This is quite apart from the question of the doubtful propriety of making extensity (if this is to mean more than the invariable arrangement of qualities in a peculiar series) an analytic determination.

Since the sensation element is a single characteristic of the sensation, it is somewhat surprising to find that a similar analysis of the affections (attributive elements) is not attempted (123). Surely, no one would deny that pleasantness and unpleasantness of are varying intensities. Experiment shows, *e. g.*, that it is perfectly easy to initiate comparison of the degrees of affective qualities. Again, it may be urged that since the affections are 'attributive,' their dependence upon other contents is a separable characteristic which destroys the elemental nature of the affection. The same point may be raised against the author's 'relational' elements. These are characterized not only by their quality (*e. g.*, 'like,' 'more,' 'one'), but, also, by

an unfailing dependency upon more than one other conscious experience. Miss Calkins, herself, speaks of this as another "characteristic;" although she makes it, in the writer's opinion, wrongly, a 'reflective' characteristic. But if reflective then extrinsic, and if extrinsic, a mere external connection.

The *Introduction's* neglect of the temporal aspect of consciousness is decidedly unjust. No mention is made of it, so far as the reviewer remembers; although it is discussed in the earlier article on the attributes (*op. cit.*, 510).

It is entirely natural that the volume under discussion should pay little attention to sensations for their own sakes. They are simply "complexes of invariably combined sensational elements" (109). How the color is 'bound up' with the brightness and bigness; what manner of connection obtains within the sensation, we are not told. To be sure, this is said, later, to be a case of "fusion," but fusion, like "association," is, for the author, an objective, 'reflective,' not an inherent form of connection. The distinguishing characteristic of the fusion—"the synthesis of peripherally excited, conscious elements"—is said to be physiological: "each one of the combined or fused elements must be directly excited by the stimulation of an end-organ." There is really a rare opportunity for some one to write a systematic account of the simpler conscious complexes and the various forms of connection. The *Introduction* disposes of the problem by saying that synthesis may be regarded either subjectively or objectively. If it is approached subjectively, introspectively, all that is found is a "relational feeling," a feeling of connection which is prominent "in judgments and general notions," but "is 'swamped' in sensational and affective elements," in the case of percepts, emotions and images. Looked at objectively, "the connection between processes is not a peculiarly psychic phenomenon, but is a general fact, common to every science. . . . It is not immediately realized, but is reflectively 'known about' the connected facts of consciousness." Fusion and association are the two types of the second mode of synthesis. Now it is difficult to see how a connection which is really conscious 'stuff' can be regarded objectively as a mere 'reflective' bond. This is surely 'atomism' in its most vicious form. The analogy with chemistry and physics, which are said to take their connections 'for granted,' is very misleading; both because (1) these sciences assume that no material (matter) appears when elements unite, and because (2) every combination of physical elements does call for an account of all the new characteristics and modes of reaction that issue when elements combine. Again, we may ask, what is the appropriateness of naming an external, 'reflective' connection of elements a 'fusion?' And how is one to 'fuse' elements in the cool process of reflection? The problem is made doubly serious by the manufacture of a vast number of new elements—intensities, extensities and relational feelings. Think of trying to weld, in the chilling flicker of meditation, "the feelings of redness, yellowness, colorless light, brightness, bigness, odor, coolness, pressure from joint and skin stimulation and pleasure" (158). The author partially redeems the situation by deserting her definition of fusion in writing of 'fusion degrees,' the closeness with which the diverse elements are connected. The closeness or looseness of a fusion is, certainly, a part of the experience, a direct mode of consciousness which does not wait upon an *ex post facto* inquiry. But if fusion and association are external connections, the distinguishing mark which separates the two types is doubly external: the connected factors are, in the one, peripherally excited, in the other, one factor, at least, is centrally excited. But whether the form of connection is

different in the two cases, or whether the factors connected are qualitatively different, in the two cases, we are not told. We must infer, therefore, that the chief types of synthesis are not necessarily different themselves, do not even synthesize different materials, but that they have different physiological antecedents. We cannot regard them, then, as psychological classes.

The author finds two attributive elements, pleasantness and unpleasantness. The elementary student would, perhaps, have been more instructed by a full discussion of the affections themselves and a briefer account of physiological theories of their origin.

The treatment of the relational elements is spoken of as "simply a developed and systematized statement of the teaching of James." There is also apparent in it, however, the strong influence of the traditional English School; Locke, Hume, Mill and Spencer. The re-statement of Spencer's term, 'relational feeling' (*i. e.*, a feeling that relates other feelings), in place of 'transitive state'—James's very apt name for certain aspects of consciousness—clearly marks a return to the more traditional view of relations. The later literature on the subject, even the important contributions of the Austrian and German schools which take up the problem in a fresher and more interesting form, seems not to have been taken into consideration. One is really disappointed to find nothing new in the chapter. Analytic work in psychology is, without any question, difficult and there is a constant tendency to invoke 'the elements' for a miraculous multiplication of raw materials; but, although marvellous increase is reported, from time to time, in various quarters, there is usually good ground for skepticism when the discovery of a new lot of elements is announced. The enormous impulse toward analysis, which is characteristic of any new science, has, undoubtedly, overshadowed the problem of synthesis, but the problem cannot be successfully evaded by the introduction of raw relations. For the physiological substrate of the relational feelings, the author adds to Spencer's crude hypothesis the only less crude associationist conception of Flechsig and suggests, accordingly, connecting fibres and certain cells in the association-centers.

A striking and almost bizarre exhibit of relational elements is introduced in the chapter on attention, where the emphasis is laid on the element of 'clearness.' This is really an object-lesson in the intemperate use of relations. If intensity and bigness were to be considered as elements, it is not difficult to make oneself believe that clearness (an indubitable feature of attention) should, likewise, be considered as elemental; but it is not so easy to see why clearness should be made a 'relational' element while these others are not. What, one may pertinately ask, does it relate? To detect the fundamental fallacy involved here it is only necessary to contrast the account under consideration with, *e. g.*, Kuelpe's treatment of attention as a state of consciousness, in which contents undergo modification in various directions—clearness, duration, reproductivity;—a state and not a definite irreducible bit of consciousness.

Miss Calkins's illustrations of the fact that "we sometimes attend to experiences which are not affectively toned" (141) seem to have been unfortunately chosen. The "well-known phrase" is surely attended to, not because it is insignificant, but because it is 'well-known,' familiar and therefore, pleasant; likewise the "aesthetically indifferent face, if familiar" is attended to for a similar reason. I cannot agree that "many acquired interests are indifferent." They are, it may be granted, often less strongly toned than 'primary interests.' This is natural, because acquired interests mean, until acquirement is perfected, constant fluctuation and, hence, a low degree of attention. But

no one that insists on the invariable presence of affection in the state of attention would, I think, be so rash as to affirm that clearness is "identical with pleasantness or unpleasantness." Such an identification would, indeed, scarcely be considered except by a theory that makes attention an element-in-consciousness, possessing a single characteristic. When, on the other hand, attention is regarded as a state or condition which affects the whole range of consciousness, there is no incongruity in giving it half a dozen predicates.

The second part of Book I deals with "concrete mental experiences." It discusses, in their two-fold aspect of idea and of "relation of a self to other selves," fusion and association (to which reference has already been made), perception, imagination, memory, thought, recognition, emotion, volition, belief, will, faith and also certain "typical personal relations." The line is drawn somewhat too closely between this section and the first part of the book. Analysis is undertaken, in the author's opinion, merely for the scientific purpose of enumerating exhaustively the fundamental features of the psychic experience. She intimates, at the beginning of part II, that she is done with "this 'post mortem study' . . . of those 'artificial abstractions,' the structural elements of consciousness and will turn" to the consideration of "'entire conscious states as they are concretely given to us.'" This sharp distinction between analysis and the study of the idea is, however, partially erased later by the qualifying, if contradictory, statement that "scientific acquaintance with an idea . . . includes . . . analysis into structural elements" as well as explanation.

Miss Calkins's argument for a psychology of selves appeared before the publication of the *Introduction* (see *Philos. Review*, IX, 490). It distinguishes 'atomistic' psychology—"a structural science of contents of consciousness"—from the "science of conscious selves."

This dichotomy calls for two or three general remarks. (1) It is not evident, in the first place, that a structural and an atomistic psychology are identical, although it is historically true that the two have not been well separated in practice. A structural psychology that is no more than a diligent search for atomic units scarcely deserves the name of a science. It is only the initial chapter to a science. Mind, considered for its own sake, is surely more than mental atoms, and requires something more than an analytic method, important as this is. It is, by all means, unfair to the facts to classify, as 'atomic' all investigations into consciousness-as-such. 'Structure' implies tissue and organization rather than atoms. The fashion (or the passion, should one say?) for using biological analogies in everything not-biological may not subside for some time; but, meanwhile, do not let us obscure our terminology by blending chemical and biological figures. Again (2) the antithesis between the two main types of psychology is not entirely clear to the writer. Why should a study of the 'self,' any more than of any other of the uses to which mental processes are put, be set over against the investigation of the mind? It is true that the apprehension of the "I" or of the "thou" is of frequent occurrence in experience; but so, also, is apprehension of countless other things. The self, as an idea or a concept, is only one among many. Surely, a psychology of selves cannot take the place of an exhaustive examination of the multitudinous offices which contents-of-consciousness fulfill. The recognition of conscious individuals, of 'shared' experiences and of 'attitudes' is certainly an important feature of mind, or better, perhaps, of the psychophysical organism;—but it is, by no means, the only one. The psychology of selves cannot, then, be considered as antithetical, or even complementary, to an 'atomistic' account of

mind, for it reveals only one aspect of consciousness-in-the-mass, of what James has so ably treated as the "stream of consciousness." Neither can it hold a similar position with respect to a 'structural' psychology, for it, by no means, exhausts the 'functions' which are the inevitable correlates of mental existence. In the third place (3), it is necessary to draw a line of distinction between a science and the use of scientific method. No one, I imagine, will deny that the self can be treated by methods and appliances common to the sciences; but it is doubtful whether it furnishes material for a science. If such a science comes into existence, it will, undoubtedly, come as a social psychology.

Consciousness of self, we are told, can only be described—apart from analysis, at which, curiously enough, the author makes no attempt—as "consciousness of myself contrasted with other selves, and second, as consciousness of my varying relations or attitudes to these other selves." This fact shows the essentially "social nature of the self," and from this, again, follow its "two fundamental phases," the egoistic, imperious phase, and the altruistic, adoptive phase, in which the emphasis is, in the one case, on the 'myself' and, in the other, on the 'other self.'

Perception is treated both as "mere idea" and as a social (sharing) experience of selves. Percepts are analyzed into sensational and relational elements, their history is given, and they are classified as "pure" and "mixed." As experience of selves, the perception's essential characteristic is said to be its social, 'altruistic' character; perceptions are 'public property.' This point seems to be forced. Does perception, even in the completed form of "my perception of an object," necessarily involve the like experience of others? The sharing is, surely, something external to the perceiving—however much social experience has figured in the *history* of the notion of external reality (*cf.* J. Royce, *Philos. Review*, III, 513)—and, moreover, it is the *object* that is shared, not the act of perceiving; the latter is as individual as imagination and memory which may, indeed, from one point of view, be said to be shared. For one of the first aims of art and of history is to extend participation in just these experiences. Although they have not a common, 'external' permanence in the world of sense, their objects and their functions are as truly—as much and as little—shared as are perceptions.

The chapter on perception would have been more satisfactory if the previous accounts of fusion and association had been more adequate. It is curious that illusions (defined as perceptions which do not "directly correspond with any outer object:" an extremely loose and ambiguous definition, by the way) are often 'pure' in distinction from 'mixed' (184); although pure perception "can occur only in primitive or in half-unconscious states" (180). Finally, it may be asked how this classification of perceptions can be fundamental, if peripherally and centrally excited sensations, on which the distinction rests, are the same in kind, as the author intimates (186-7).

In the treatment of memory, Miss Calkins follows Sully in the use of the term 'reproductive imagination.' The chapter is brief, pedagogical and jejune. There is nothing in it to tell the student what memory is, in terms of mind. It is worth noting that the *Introduction* deals, for the most part, with memory and imagination as functions of mind—the very terms are explicitly functional terms,—and yet makes one a subclass under the other. One would rather expect insistence on their essentially diverse functions (construction of a definite past and elaboration of a separate world of 'reality') and insistence on their ultimate likeness as contents-of-consciousness.

The two-fold treatment of thought (generalization, judgment and reasoning) is clear and extremely well carried through. In the analytical part, one cannot, however, avoid the feeling that the relational elements of 'generality' and of 'wholeness' are entirely overdone, and that they do not really supply the lack so woefully felt in all associationistic accounts of judgment and reasoning. The social character of thinking appears in its universality. "No man appropriates the multiplication table" or the axioms of Euclid. "Our thoughts are never regarded as personal property." "We do always in our thinking assume the conceivable universality of the experience, we acknowledge that other selves have, or may have, the concepts that we possess." Here, again, there seems to be a confusion of the 'universals' (a logical term) that are reached in generalization and a sharing of thoughts in a community of individuals. The 'anyness' of the general notion surely does not refer to 'any-thinking-body,' but to any-one-of-a-class. It is neither personal, psychological nor social, but epistemological. The triangularity of "any triangle" is scarcely "the part experienced by anybody who thinks of the triangle" (220); but the common mark of all things in a certain class. The social covenant is a subordinate and unessential feature of the concept.

The chapter on Recognition (XIX) deals chiefly with the 'feeling of familiarity,' which is found to be a 'relational experience,' further analyzable into the 'relational feelings' of 'same' and of 'past,' the latter "probably involving a feeling of linkage or connection" (260). Why not commit oneself unreservedly to the 'psychologist's fallacy' and push analysis to the phonetic elements of the words 'same' and 'past'?

"An emotion is defined as any complex fact of consciousness, of which pleasantness or unpleasantness is an important feature" (263). The taste of lemonade or the feeling of hunger, then? Even Sully's loose classification is more rigid, for it limits emotions to "mental feelings." There are two main types of emotion, those of happiness and those of unhappiness. The "ideas of bodily change" form a "secondary constituent of emotions." On the 'self' side, "emotion is the relation of individual with individual." Considered thus, emotion is either personal or impersonal (*i. e.*, it involves an attitude toward selves or things).¹ Either the social nature of the self (152) is not fundamental or this classification transcends the limits of a 'self' psychology.

The fundamental dualism of method which we have been observing works best in the realm of will and faith, where the self is, without doubt, thrust well into the foreground. Will and faith as the "relations of self to selves" (299) correspond, respectively, to volition and belief in idea-psychology. The treatment of these subjects is particularly well thought out. The general point of view is much like that of James. If the reviewer were to make any general criticism, it would be that will and faith, as active relations of selves, are too sharply set off from the 'passive' attitudes of emotion.

The chapters on Comparative Psychology give a brief and general statement of the facts of the animal and the child mind. The author is less at home here, depending largely on a few secondary sources; nevertheless, she writes clearly and comprehensively. An occasional slip is to be noticed. The invertebrates are said to have "no olfactory or gusta-

¹ "To quote Titchener, in emotion, the perception or image 'is swamped in the affection.'" I cannot verify the quotation, although I find the phrase "swamped by affection" (*Primer*, 1899, 141). Both the *Primer* (*loc. cit.*) and the *Outline*, 1899, 229, say very explicitly that the ideational unit in the emotion is not the perception or image but the assimilation; that the emotion demands a situation.

tory organs" (357), although the end-organs of pressure, taste and smell are, we are told, developed before visual organs (357), and four types of eyes are found in invertebrates (361). In another place, the reader is gravely informed that fishes "have no brain, and therefore no olfactory lobe" (360). Again, certain statements are made broadly where fuller knowledge would have counselled caution; *e. g.*, "there is no doubt at all that the higher vertebrates and the insects possess sense-images, as well as sense-precepts" (365). And one can but look with suspicion upon a social consciousness that justifies itself by the animal heroisms of a Thompson-Seton.

The sections on Abnormal Psychology furnish only a brief outline, but the point of view set forth is safe and conservative. The chapter does not show a wide knowledge of the literature. The author has reserved discussion of various difficult problems for the appendix. This helps the perspective and the proportions of the book and will, doubtless, be an aid to the junior student.

The reviewer's appreciation of the book in hand may be set down much more quickly than his adverse criticisms; not because it is given less freely or heartily than they, but because, quite on the contrary, it embraces the work as a whole, while they have dealt, for the most part, with minor particulars. The book is exceedingly good to read. The ease and directness of the style win one from the first page. It is, however, the vividness of presentation and the evident reality of the experiences discussed that will best serve the author's specific purpose. This is exceedingly important in an elementary text-book in psychology. The volume shows real psychological living, and it will help the student who comprehends it to find and to use psychological material in his own experience. Nearly every new topic is introduced by a concrete example which will start associations and make the topic significant. There is, moreover, a wealth of illustrations, chosen, as a rule, with care and discretion. The subordination of bare schemata and classifications is, in the writer's opinion, exceedingly wise. The attractiveness of psychological thinking can never be set before the youthful student by definitions and rubrications, however clear and logical these may be.

At the same time it cannot be denied that the *Introduction* is difficult. It has, quite often, the psychological world, apparently, more than the student, in view. The discussion of some problems, *e. g.*, the problem of attention, presupposes a knowledge of the subject well beyond the grasp of the elementary student. This mode of treatment may, however, be intentional, since the author believes that a text-book is a "subsidiary adjunct" in teaching science.¹

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¹ The following minor points may be noted: Red, green, yellow and blue are said to be the elementary color qualities. Other colors are complex. "Yellow-green looks like yellow and green; that is, it is introspectively analyzable into yellow and green." But why not say, in the same way, that green looks like olive and peacock, and is therefore complex? Simple qualities can be similar and yet not be identical with each other. As a matter of fact, the author herself says: "green, for instance, appears to us like red and blue and yellow, but unlike sour and hot" (22). . . . The following statements are ambiguous. "The retina . . . terminating in the ciliary muscle." "The rods and cones, the only part of the eye on which the light can act directly" (24). "The ciliary muscle . . . whose contraction . . . enlarges the pupil" (24). With steady fixation straight ahead, a scarlet pencil when moved in "will seem gray or black until it is almost directly in front of my eye." . . . Some of the corners of fig. 4 are rounded and some are not. . . . The mucous membrane of the nasal cavity is said to be 'composed' of nerve fibres (63). . . . For the two-point limen, "no more probable or adequate hypothesis has been proposed than Weber's unstimulated nerve fibres (69). . . . Too great stress is laid upon relative temperatures of the body and surroundings in the production of warm and cold sensations (77). Cf. Ebbinghaus, *Psychologie*, 345-6, for adaptation. . . . The "static sense of consciousness of